

Aerosol generation during airway management

Throughout the SARS-CoV-2 pandemic, a clear message has been given that healthcare workers (HCWs) performing airway management are at risk of viral infection from contact, droplet and aerosol spread. Hence, optimising [staff safety](#) using [appropriate PPE](#) has been given the highest priority by leading authorities, including the Intensive Care Medicine-Anaesthesia Covid-19 Hub [1, 2]. [Evidence](#), however, for an increased risk to airway managers is by no means conclusive [3]. More recently, there has been debate regarding the extent of aerosol generation during airway management and whether the risk of airborne transmission is significant.

The risk of SARS-CoV-2 transmission from patients to airway managers and those working alongside them, and the development of subsequent Covid-19 is unclear. There are no studies that conclude that the risk of infection transmission to airway managers is significant. The [intubateCOVID study](#) reported an association between involvement in intubation and subsequent symptoms of COVID-19, but did not show causation [4].

The controversy about aerosol generation during airway management has been highlighted by two papers recently published in *Anaesthesia* which provide contrasting evidence. In [Brown et al.'s study](#), the authors conclude that tracheal intubation is not an aerosol generating procedure (AGP) and that tracheal extubation, although generating more aerosol, also falls below the currently recognised level for designation as a high-risk AGP [5]. The authors conclude by proposing the need to re-evaluate what constitutes an AGP and what PPE is required as a result. In [Dhillon et al.'s study](#), the authors report significant aerosolisation of small particles during airway management in clinical settings, suggesting the risk to airway managers was genuine [6].

These papers, which have significant methodological differences, offer conflicting, perhaps confusing conclusions and have generated considerable debate. Studies of in-hospital SARS-CoV-2 infection and seroconversion amongst healthcare workers have generally identified anaesthetists and intensivists to be at low risk compared to other specialties, but the reason for this is difficult to confirm and is likely multifactorial [7, 8]. At this stage, it would be premature to assume this is solely due to tracheal intubation not being an AGP. Effective PPE, as well as other infection preventative measures, may be equally relevant.

Some might feel it is time to dispense with aerosol-protective PPE during tracheal intubation and perhaps even extubation and other interventions. There may be concerns regarding PPE availability; it can be unpleasant to wear and possibly impairs technical and non-technical performance during airway management. However, the precautionary principle should be adhered to and while there is uncertainty HCW safety should be prioritised. Public Health bodies from England, Scotland, Wales and Northern Ireland and NERVTAG may update their guidance in the light of the evolving evidence base, but until then, our recommendation is to maintain current standards of protection against aerosol transmission during airway management.

References

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